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The relationship between osteopathic lesions and patellofemoral syndrome

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HYPOTHOSIS

Individuals who exhibit classic symptoms of patellofemoral syndrome will also present some common osteopathic lesions.

ABSTRACT

The purpose of this study was to investigate whether there were common osteopathic lesions found in subjects who suffered from patellofemoral syndrome (PFS) when compared to a similar control group.

This study was a between-subjects blind research design. The directed sample consisted of forty subjects ranging in age from 16-53 years (74% ranged from age 20 - 29). The Patient Group (n = 20) was pre-diagnosed with PFS, while the Control Group (n = 20) was not. The two groups were comparable in terms of age and gender.

Subjects had to meet certain inclusion criteria for the whole study, such as maintenance of an active lifestyle, no surgeries, fractures or major traumas to the lower extremities, and no osteopathic treatments within the previous year. Inclusion criteria in the Patient Group were high scores on two questionnaires: the Activity/Pain Frequency Questionnaire and the Knee Pain Diagram.

The two groups differed significantly (t-test < 0.001) on each of two existing pain tests: (1) Activity/Pain Frequency Questionnaire (Rejeski et al, 1995), and (2) Knee Pain Diagram (Post & Fulkerson, 1994).

Each subject was examined in a 90-120 minute session. Using an osteopathic approach, 139 structures were evaluated for their level of mobility. Cranial bones, all vertebrae, thoracic & abdominal visceral, the pelvis and the lower extremities were included in the evaluation. Within the lower extremity, particular attention was given to the knee joint itself, its supporting ligaments, and all the bones of the

foot. Each structure was evaluated for the level of mobility of its physiological parameters.

Test scores were statistically analyzed using a two-tailed t-test to examine the differences between the two groups. Nineteen structures and groups of structures were statistically significant. The Pearson product-moment correlation coefficient was used to examine the association between the two pain tests. It was also employed to examine intercorrelations between these two tests and the 19 identified structures. Levels of statistical significance ranged from 0.05 to 0.001. These structures and groups of structures were, Cranial, OM, Ethmoid, Occiput, C0-C1-C2, T7-T12, T11, L4, Liver, Large Intestine, Ilium, Iliac Crest, ASIS, All Knee Structures, Tibial-Femoral Rotation, Tibial-Femoral Compression, Interosseous Membrane, Sensorial Foot, and Navicular.

The discussion of results focused on the statistically significant 19 structures and groups of structures. Each structure and group of structures was discussed in terms of their anatomical relation to the other structures and to PFS.

Previous research focused on relationships of the lower extremity and has been confined to the musculo-skeletal system. The most important finding in of this study is that lesions were consistently found in structures throughout the entire body. Thus supporting the osteopathic concept of the body functioning as a total unit. Although there are consistent lesional findings, there is not a specific pattern of lesions that all subjects exhibit.

Future studies may consider building on the significant findings of this study.

SOMMAIRE

Le but de cette étude était de vérifier s'il existe des lésions ostéopathiques communes chez des sujets souffrant du syndrome fémoro-patellaire (SFP) lorsque comparés à un groupe contrôle similaire.

Cette étude était basée sur un modèle inter-groupe "à l'aveugle". L'échantillon consistait en quarante sujets d'âge variant entre 16 et 53 ans (74% entre 20 et 29 ans). Le SFP avait été pré-diagnostiqué chez les sujets du groupe de patient (n=20) et était absent chez les sujets du groupe contrôle (n=20). Les deux groupes étaient comparables au point de vue âge et sexe.

Les sujets du groupe (patients) devaient rencontrer certains critères pour participer à l'étude, soit maintenir un certain niveau d'activité physique, ne pas avoir subi de chirurgie, de fracture ou de traumatisme majeur au niveau des membres inférieurs et ne pas avoir reçu de traitement d'ostéopathie au cours de la dernière année. Ils devaient également obtenir un résultat élevé sur les deux questionnaires suivants: Fréquence douleur/activité et Diagramme de douleur au genou.

Les deux groupes différaient significativement (t-test < 0.001) sur chacun des deux tests: (1) Questionnaire de Fréquence Douleur/Activité (Rejeski et al, 1995) et (2) Diagramme de douleur au genou (Post & Fulkerson, 1994).

Chaque sujet a été examiné durant une session de 90 à 120 minutes. Utilisant l'approche ostéopathique, la mobilité de 139 structures a été évaluée. Les os crâniens, chacune des vertèbres,

les viscères thoraciques et abdominales, le bassin et les membres inférieurs faisaient partie de l'évaluation. Au niveau des membres inférieurs, une attention particulière a été portée à l'articulation du genou, ses ligaments de support ainsi que chacun des os du pied. Les niveaux des paramètres de mobilité physiologique de chacune de ces structures ont été évalués.

Les résultats des tests ont été statistiquement analysés en utilisant un modèle "two-tailed t-test" afin de mettre en évidence les différences entre les deux groupes. Dix-neuf structures et groupes de structures ressortaient statistiquement de façon significative. Le coefficient de corrélation de Pearson a été utilisé pour examiner les similarités entre les deux tests de douleur. Il a également été utilisé pour examiner les intercorrélations entre les résultats des deux tests et les 19 structures et groupes des structures identifiées. Les niveaux d'importance statistiques se situaient entre 0.05 et 0.001. Ces structures et groupes des structures étaient les suivantes: le crâne, l'OM, l'ethmoïde, l'occiput, C0-C1-C2, D7-D12, D11, L4, le foie, le gros intestin, l'ilion, la crête iliaque, l'ASIS, toutes les structures du genou, la rotation tibio-fémorale, la compression tibio-fémorale, la membrane inter-osseuse, le pied sensoriel et l'os naviculaire.

La discussion des résultats fut centrée sur les 19 structures et groupes des structures statistiquement significatives. Chaque structure et groupe des structures fut discutée en fonction de leur relation avec les autres structures et avec le SFP.

Les recherches faites antérieurement sur le sujet étaient principalement centrées sur la relation avec le membre inférieur et se limitaient au système musculo-squelettique. Les principaux résultats de ces recherches démontraient qu'il y avait présence de lésions dans différentes structures du corps, supportant ainsi le concept osteopathique du corps fonctionnant comme une unité. Malgré qu'il y ait présence de lésions, un type spécifique de lésions n'a pu être établi chez tous les sujets.

Des études ultérieures pourraient prendre en considération les données significatives de cette étude.

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